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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,675	03/18/2004	Jianbo Lu	81095826FGT1908	2674
28549	7590	11/02/2005	EXAMINER	
KEVIN G. MIERZWA ARTZ & ARTZ, P.C. 28333 TELEGRAPH ROAD, SUITE 250 SOUTHFIELD, MI 48034			SY, MARIANO ONG	
			ART UNIT	PAPER NUMBER
			3683	

DATE MAILED: 11/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/708,675

Applicant(s)

LU ET AL.

Examiner

Mariano Sy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 21-26 is/are rejected.
- 7) ☒ Claim(s) 17-20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The amendment filed on August 12, 2005 has been received.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 2, 5, 9, 10, 13, 21, 22, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faye et al. (US 2002/0069006 A1) in view of Bottiger et al. (US 6,449,542) and in view of Engle (US 5,452,982).

Re-claims 1, 2, 5, 9, 10, and 13 Faye et al. disclosed, as shown in fig. 1-2, a system and method of controlling a vehicle with a trailer comprising: a vehicle velocity

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sensor; a steering wheel angle sensor; and a controller coupled to the velocity sensor and the steering sensor, said controller determine the vehicle velocity is above a velocity threshold and the steering wheel angle is zero, said controller apply brake-steer to the vehicle, see abstract.

However Faye et al. was silent to disclose means to determine the presence of the trailer; means to determine a rear axle side slip angle of the vehicle.

Engle teaches the use of a camera 70 to determine the presence of the trailer.

It would have been obvious to one of ordinary skill in the art to install a camera into the system of Faye et al., as taught by Engle, in order to ease alignment for hitch connection between of the tractor and the trailer.

Bottiger et al. teaches, as shown in fig. 1-3, means to determine a rear axle side slip angle of the vehicle, see col. 1, lines 47-67 and col. 2, lines 1-56.

It would have been obvious to one of ordinary skill in the art to have include a means to determine a rear axle side slip angle of the vehicle into the system of Faye et al., as taught by Bottiger et al., in order to maintain stability of the vehicle with the trailer.

Re-claims 21, 22, and 25 Faye et al. disclosed, as shown in fig. 1-2, method of controlling a vehicle with a trailer comprising: determining a vehicle velocity; determining a hand wheel position signal corresponding to an angle of the hand wheel angle position; determining a sensed yaw rate from a yaw rate sensor; calculating a yaw rate based on the hand wheel signal; applying brake-steer to the vehicle when the vehicle velocity is above a velocity threshold and the sensed yaw rate is diverging from the hand wheel yaw rate, see abstract.

However Faye et al. was silent to disclose determining the presence of the trailer; determining a rear axle side slip angle of the vehicle.

Engle teaches the use of a camera 70 to determine the presence of the trailer.

It would have been obvious to one of ordinary skill in the art to install a camera into the system of Faye et al., as taught by Engle, in order to ease alignment for hitch connection between the tractor and the trailer.

Bottiger et al. teaches, as shown in fig. 1-3, means to determine a rear axle side slip angle of the vehicle, see col. 1, lines 47-67 and col. 2, lines 1-56.

It would have been obvious to one of ordinary skill in the art to have include a means to determine a rear axle side slip angle of the vehicle into the system of Faye et al., as taught by Bottiger et al., in order to maintain stability of the vehicle with the trailer.

5. Claims 3, 4, 11, 12, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faye et al. in view of Bottiger et al. and Engle as applied to claims 1, 9, and 21 above, and further in view of Breed et al. (US 6,748,797).

Re-claims 3, 4, 11, 12, 23, and 24 Faye et al. as modified failed to disclose means to determine the presence of a trailer comprises a reverse aid sensor or an ultrasonic sensor.

Breed et al. teaches the use of several types of sensors used in vehicle such as camera, radar, rear, and vision sensors, see col. 23, lines 44-53.

It would have been obvious to one of ordinary skill in the art to install a reverse aid sensor or an ultrasonic sensor into the system of Faye et al. as modified, in view of

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the teaching of Breed et al., as a matter of choice of sensors that have the same function of ease alignment for hitch connection between the tractor and the trailer.

6. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faye et al. in view of Bottiger et al. and Engle as applied to claim 1 above, and further in view of Bell et al. (US 4,428,596).

Re-claims 6 and 7 Faye et al. failed to disclose wherein determining the presence of a trailer comprises detecting a locating plate with a locating hole positioned along a trailer tongue behind the vehicle.

Bell et al. teaches, as shown in fig. 1-3, a locating plate with a locating hole positioned along a trailer tongue behind the vehicle.

It would have been obvious to one of ordinary skill in the art to have install a locating plate with a locating hole positioned along a trailer tongue behind the vehicle of Faye et al. as modified, in view of the teaching of Bell et al., in order to ease alignment for hitch connection between the tractor and the trailer.

7. Claims 8, 15, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faye et al. in view of Bottiger et al. and Engle as applied to claims 1, 9, and 21 above, and further in view of Wessman (US 6,612,394).

Re-claims 8, 15, and 26 Faye et al. as modified failed to disclose wherein applying brake-steer comprises applying at least one brake at a first wheel to reduce a vehicle turning radius.

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Wessman teaches apply brake-steer by applying at least one brake at a first wheel to reduce a vehicle turning radius, see abstract.

It would have been obvious to one of ordinary skill in the art to apply brake-steer by applying at least one brake at a first wheel to reduce a vehicle turning radius into the system of Faye et al. as modified, in view of the teaching of Wessman, in order to maintain stability of a vehicle during turning.

8. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Faye et al. in view of Bottiger et al. and Engle as applied to claim 9 above, and further in view of Schmitt et al. (US 6,456,924).

Re-claim 16 Faye et al. as modified failed to disclose wherein the controller programmed to brake-steer by applying an increased drive torque to a second wheel relative to a first wheel.

Schmitt et al. teaches controller programmed to brake-steer by applying an increased drive torque to a second wheel relative to a first wheel.

It would have been obvious to one of ordinary skill in the art to utilize the known teaching of the controller programmed to brake-steer by applying an increased drive torque to a second wheel relative to a first wheel in the system of Faye et al. as modified, as taught by Schmitt et al., in order to improve vehicle's stability during turning.

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9. Claims 17-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Applicant's arguments filed on August 12, 2005 have been fully considered but they are not persuasive.

Examiner maintains the rejection is proper. Bottiger et al. '542 is used mainly for the teaching of determining rear axle slip angle of the vehicle and not the trailer as recited in the claim language. The prior arts cited clearly teach the claimed limitations as outlined in the office action above.

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariano Sy whose telephone number is 571-272-7126.


The examiner can normally be reached on Mon.-Fri. from 8:30 A.M. to 2:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James McClellan, can be reached on 571-272-6786. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 M. Sy

October 28, 2005


JAMES MCCLELLAN
PRIMARY EXAMINER
10/28/05

Replacement Sheet 10/708,675